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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,808	02/15/2005	Yunging Liu	JEEKP102US	1617

7590 02/26/2009

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EXAMINER	
KISHORE, GOLLAMUDI S	

ART UNIT	PAPER NUMBER
1612	

MAIL DATE	DELIVERY MODE
02/26/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,808	LIU ET AL.	
	Examiner	Art Unit	
	Gollamudi S. Kishore, Ph.D	1612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2-15-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims included in the prosecution are 1-21.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is confusing. Is the final preparation in nanometer sizes? Step D recites 'granules'. This term is usually used to denote smaller particles prepared into larger granular mater. In addition, the term 'low' is a relative term and therefore, renders claim 1 indefinite (also in claim 18). Finally, the examiner suggests naming specific compounds falling under the term, 'amphiphiles' since it would appear that applicant's intent is to include even compounds such as cyclodextrins which are not really amphiphiles.

Claim 3 recites 'solvent dissolving the amphiphile------"and names one of the solvents as water. Phospholipids are not soluble in water. Similar is the case with claim 20.

It is unclear as to what applicant intends to convey by 'K30' and 'dextran 40, 70" in claim 11. Furthermore, stabilizer in claim 11 lacks an antecedent basis in claim 10.

What is being conveyed by 'atomizated' in claim 14?

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 8-10, 12, 14-15, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Zou (5,902,604).

Zou teaches a method of preparing solid submicron preparations of liposomes containing a drug (anthracyclines). The process involves mixing the phospholipids in t-butyl alcohol and water and a surfactant (polysorbate 80) and drug and lyophilizing the mixture (under reduced pressure) (see abstract, col. 8, lines 10-18, Example 1 and claims).

5. Claims 1-3, 8, 12, 14-15, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Mehta (4,950,432).

Mehta teaches a method of preparing solid submicron preparations of liposomes containing a drug (polyene). The process involves mixing the phospholipids in t-butyl alcohol and drug and lyophilizing the mixture (see abstract, Examples and claims).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 8-9 11-12, 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 92/16196 of record.

WO discloses solid formulations containing cyclodextrins and phospholipid and an active agent. The formulations further contain polyvinylpyrrolidone. The method involves the addition of the active agent to the amphiphile followed by lyophilization (abstract, page 7, line 28, Examples and claims).

8. Claims 1-3, 8-12, 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Zou (5,902,604).

Zou discloses liposomal formulations containing a phospholipid, Sorbate 80 and an active agent. The active agents include anthracycline compounds such as doxorubicin and annamycin. The compositions further include polyvinylpyrrolidone. The method of preparation involves the preparation of a solution of the phospholipid in butyl alcohol and Water and the active agent is added to the phospholipid. The surfactant is added to the solution. The composition is then lyophilized (abstract, col. 2, lines 22-51; col. 3, line 3 through col. 5, line 34; col. 6, lines 59-67; Examples and claims).

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 7-9, 12-21 are rejected under 35 U.S.C. 102(e) or (a) as being anticipated by Zadi (US 2003/0138481).

Zadi discloses lyophilized preparations of paclitaxel liposomes. The method involves the addition of the active agent to the phospholipids in an aqueous medium (0028-0045 and examples).

The 102 (a) rejection will be withdrawn upon the submission of English translations of priority papers.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 5-6, 8 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 92 cited above.

The teachings of WO have been discussed above. What is lacking in WO is the temperature at which the amphiphile is dissolved. However, since the dissolution of the amphiphile is important, it would have been obvious to one of ordinary skill in the art to use the proper temperature at which the amphiphile dissolves and therefore, deemed to be parameters manipulatable by an artisan. WO also does not explicitly state the sizes of the particles. In the absence of showing unexpected results, it is deemed obvious to one of ordinary skill in the art to manipulate the sizes to obtain the best possible results.

12. Claims 5-6, 8, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zou.

The teachings of Zou have been discussed above. What is lacking in Zou is the temperature at which the amphiphile is dissolved. However, since the dissolution of the amphiphile is important, it would have been obvious to one of ordinary skill in the art to use the proper temperature at which the amphiphile dissolves and therefore, deemed to be parameters manipulatable by an artisan. Zou also does not teach instantly claimed paclitaxel. However, in view of Zou's teachings of applicability of the system to hydrophobic cancer drugs such as doxorubicin, it would have been obvious to one of ordinary skill in the art to use any hydrophobic agent with a reasonable expectation of success since the principle of encapsulation is the same irrespective of the active agent.

13. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 92 cited above in view of Zou (5,902,604) cited above.

The teachings of WO have been discussed above. What is lacking in WO is the use of surfactant such as sorbitan 80.

The teachings of Zou have been discussed above. Zou in addition teaches that the addition of sorbitans not only stabilizes the liposomal composition, but also modulates the sizes of the liposomes (Discussion on col. 13).

The inclusion of a surfactant in the composition of WO would have been obvious to one of ordinary skill in the art since such an inclusion would stabilize the compositions, but also modulates the particle sizes as taught by Zou.

14. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zou in combination with Zadi cited above.

The teachings of Zou have been discussed above. Zou does not teach paclitaxel as the active agent. However, it would have been obvious to one of ordinary skill in the art to encapsulate paclitaxel with a reasonable expectation of success since Zadi teaches that liposomes are routinely used for the encapsulation of paclitaxel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gollamudi S. Kishore, Ph.D whose telephone number is (571) 272-0598. The examiner can normally be reached on 6:30 AM- 4 PM, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krass Frederick can be reached on (571) 272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gollamudi S Kishore/
Primary Examiner, Art Unit 1612

GSK